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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,915	12/09/2003	Matthew L. Cooper	CQ10210	4729
23493	7590	10/31/2007		
SUGHRUE MION, PLLC 401 Castro Street, Ste 220 Mountain View, CA 94041-2007			EXAMINER TIMBLIN, ROBERT M	
			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/729,915	<b>Applicant(s)</b> COOPER ET AL.	
	<b>Examiner</b> Robert M. Timblin	<b>Art Unit</b> 2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-8,10-16,18,20-23 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,10-16,18,20-23 and 25-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action corresponds to application 10/729,915 and applicant's remarks/amendments filed 8/22/2007.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/22/2007 has been entered.

#### ***Response to Amendment***

The Amendments submitted 8/22/2007 have been acknowledged and entered. Claims 1, 4-8, 10-16, 18, 20-23, and 25-29 are pending.

#### ***Claim Objections***

The previous claim objections have been withdrawn.

#### ***Claim Rejections - 35 USC § 112***

Applicant's traversal of the previous 35 USC 112 rejection is persuasive and therefore the rejection is withdrawn.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 26 has been amended to overcome the previous 35 USC 101 rejection and accordingly the rejection to this claim is withdrawn.

Claim 26 is now accepted under 35 USC 101 as the claim recites a computerized system while including an input link (referring to Applicants figure 18) to suggest the system is a hardware system.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 11, 12, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated over Bellegarda et al. (Bellegarda hereinafter) (U.S. Patent Application 2005/0044487).

With respect to claim 1, Bellegarda teaches A method for organizing a plurality of data files using wherein at least one meta-data element is associated with each data file, the method comprising:

extracting (0032; feature extraction), for at least some selected data files (0029, collection T files), at least one meta-data element (0032, 0035, features and characteristics of a document, and paragraphs 0025 and 0049) associated with a respective selected data (document, 0036);

organizing the extracted meta-data elements (figure 4,5) into a single ordered set (0032; matrix W) wherein the set (matrix) is ordered consecutively based on values for one or more of the extracted meta-data elements (figure 4; i.e. Bellegarda discloses the features of documents, or metadata, are organized in a matrix);

calculating pair-wise differences (0036, equation (3)) between values of each of the extracted meta-data elements (0032, 0035, features and characteristics of a document);

inputting at least on value of a clustering sensitivity parameter (abstract, 0028-parameters to determine if a newly added document "fits", and 0039-granularity threshold), said clustering sensitivity parameter (0028, 0039) defining granularity of the clustering (0039, 0042, drawing reference 303), and multiplying each pair-wise difference (0036, equation (3)) by the clustering sensitivity parameter (0028, 0039) to obtain a plurality of similarity values (0035-0036, closeness calculations) for determining clustering based on the similarity values (0035-0036, closeness calculations) and at a

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granularity (drawing reference 303) defined by the clustering sensitivity parameter (0028, 0039); and

dividing the selected data files into groups (figures 2A-B) based on the similarity values (0035-0036, closeness calculations).

With respect to claim 11, Bellegarda teaches A method for organizing a plurality of data files stored in a digital memory using meta-data wherein at least one meta-data element that is at least associated with a corresponding one of the plurality data files, the method comprising:

extracting (0032; feature extraction) from the memory meta-data elements (0032, 0035, features and characteristics of a document. 0025 and 0049 disclose that this method can also be used with traditional methods of clustering based on metadata) of the plurality of data files (0029, collection T files);

organizing the extracted meta-data elements (figure 4,5) into a single ordered set (0032; matrix W) wherein the set (matrix) is ordered consecutively based on values for one or more of the extracted meta-data elements (figure 4; i.e. Bellegarda discloses the features of documents, or metadata, are organized in a matrix);

calculating pair-wise differences (0036, equation (3)) between values of each of the extracted meta-data elements (0032, 0035, features and characteristics of a document);

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obtaining a desired value of a clustering sensitivity parameter (abstract, 0028-parameters to determine if a newly added document “fits”, and 0039-granularity threshold) for analyzing the meta data (0039);

multiplying each pair-wise difference (0036, equation (3)) by the clustering sensitivity parameter (0028, 0039) to obtain a plurality of similarity values (0035-0036, closeness calculations) having granularity (drawing reference 303) defined by the clustering sensitivity parameter (0028, 0039);

determining a structure within the meta-data elements (figures 4-5) by comparing, for at least a subset of the plurality of data files (0029, collection T files), the similarity values (0035-0036, closeness calculations); and

storing the structure (figures 4-5) of the data files (0029, collection T files) in a memory (figure 1, drawing reference 100).

With respect to claim 12, Bellegarda teaches clustering the data files into groups (0039) using the determined structure of the meta-data elements (figures 4-5).

With respect to claim 16, A storage medium storing a set of program instructions executable on a data processing device and usable to organize a plurality of data files by using meta data having at least one meta data element at least associated with each data file, the program comprising:

extracting (0032; feature extraction), for at least some selected data files (0029, collection T files), at least one meta-data element (0032, 0035, features and

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characteristics of a document) associated with each of the some data files (document, 0036);

instructions for organizing (figure 4,5) the extracted meta-data elements into a single ordered set (0032; matrix W) wherein the set is ordered consecutively based on at least one of: chronological, alphabetical, numerical, or geographical ordering (i.e. the organization in matrix W is numerical ascending according to documents  $d_j$  on the x axis or words  $W_i$  on the y axis) ;

instructions for inputting a parameter value (abstract, 0028-parameters to determine if a newly added document "fits", and 0039-granularity threshold), said clustering sensitivity parameter (0028, 0039) defining granularity of the clustering (0039, 0042, drawing reference 303);

instructions for multiplying each pair-wise difference (0036, equation (3)) by the clustering sensitivity parameter (0028, 0039) to obtain a plurality of similarity values (0035-0036, closeness calculations) to obtain a plurality of similarity values (0035-0036, closeness calculations) having a granularity (drawing reference 303) defined by the clustering sensitivity parameter (0028, 0039); and

dividing the selected data files into groups (figures 2A-B) based on the similarity values (0035-0036, closeness calculations) of the extracted meta-data elements (0032, file features).



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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7, 10, 13, 18, 20-22, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellegarda as applied to claims 1, 11, 12, and 16 above in view of Foote (Foote, "Automatic Audio Segmentation Using a Measure of Audio Novelty", FX Palo Alto Laboratory Inc).

With respect to claims 4 and 20 and similar claim 27, Bellegarda fails to teach determining at least one similarity value as presented in the corresponding calculation.

Foote, however, teaches determining at least one similarity value as presented as the calculation on page 452 where a distance measure is computed to yield a similarity score.

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the computation of Foote would have given Bellegarda system a property that can yield a similarity score (452, subsection A). Such a calculation would help Bellegarda further analyze data files.

This rejection applies equally well to claims 20 and 27.

With respect to claims 5 and 18 Bellegarda fails to teach determining, for each of at least some data files, at least one novelty value for that data file based on the at least one similarity value for that data file and for a number of nearby data files.

Foote, however teaches this limitation as finding the novelty measure to detect a novelty value (subsection B 453-454).

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the computation of Foot would have given Bellegarda system the ability to detect novelty value (454) and further to help analyze data files.

With respect to claims 6 and 22 Foote teaches determining at least one novelty value as presented as the calculation on page 454, where novelty  $N(i)$  is computed to detect a novelty value. The Gaussian tapered checkerboard kernel can be found within reference to figure 3 on page 453. The motivation for combining Foote to Bellegarda can equally apply well from the rejection of claims 4 and 20 and similar claim 27 above.

With respect to claims 7, 13 and 21 Bellegarda fails to teach determining at least one boundary location between ones of the plurality of data files based on the at least one novelty value determined for at least some of the data files.

Foote, however, teaches determining at least one boundary location between ones of the plurality of data files based on the at least one novelty value determined for

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at least some of the data files as extracting segment boundaries (subsection C, 454) to estimate boundaries.

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because determining at least one boundary location of Foote would have given Bellegarda system a good estimate of boundaries (under *Audio segmentation and indexing* 455).

With respect to claims 10 and 25 Bellegarda fails to teach at least one parameter value that maximizes the confidence value.

Foote, however, teaches at least one parameter value that maximizes the confidence value as the similarity matrix S will have the maximum values (3<sup>rd</sup> paragraph in subsection A, page 452). The motivation for combining Foote to Bellegarda can equally apply well from the rejection of claims 4 and 20 and similar claim 27 above.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellegarda and Foote as applied to claims 4-7, 10, 13, 18, 20-22, and 27 above and further in view of Platt.

With respect to claim 14 Bellegarda teaches determining a similarity value by comparing at least some of the meta-data elements in one cluster of data files to at

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least some other ones of the meta data elements in that element cluster of data files (0036).

Bellegarda fails to teach determining a dissimilarity value by comparing at least some of the meta-data elements in one cluster of data files to at least some of the meta-data elements in another cluster of data files.

Platt, however, teaches determining a dissimilarity value by comparing at least some of the meta-data elements in one cluster of data files to at least some of the meta-data elements in another cluster of data files (abstract) for finding differing items.

With respect to claim 15, Platt teaches determining a value corresponding to a desired grouping of the clusters of data files based on the differences of the similarity values and the dissimilarity values (col. 5 lines 43-48).

Claims 8, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellegarda and Foote as set forth in claims 4-7, 10, 13, 18, 20-22, and 27 above and further in view of Schwanke (US 5,485,621).

With respect to claims 8 and 23, the combination of Bellegarda/Foot fails to teach determining a confidence value for that boundary location. Schwanke, however, teaches this limitation (col. 21, lines 43-45) to provide a decision on which groups to combine.

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references

because this teaching of Schwanke would have given the combination of Bellegarda and Foote's system a decision on which groups to combine (abstract, Schwanke).

With respect to claim 26, the limitations of this claim been addressed in the preceding claims set forth above. Accordingly, these claims have been rejected for the same reasons as set forth above by the combination of Bellegarda/Platt and Foote in further view of Schwanke.

Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Bellegarda as applied to claims 1, 11, 12, and 16 above in view of Gargi et al. ('Gargi' hereinafter) (U.S. Patent Application 2005/0027712 A1).

With respect to claim 28, Bellegarda fails to teach an exponentially decreasing function of the scalar magnitude of the difference between  $t_{sub j}$  and  $t_{sub j}$  relative to K.

Gargi, however, teaches this limitation in the formula above [0055] and in respect to a weighting factor [0051] for efficiently organizing data.

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teachings of Gargi would have provided to Bellegarda's system aid in developing an organized collection of data ([0009], Gargi).

With respect to claim 29, Bellegarda fails to teach the similarity value of the at least one pair of the selected data files comprises a term depending on an inner product of  $v_{sub\ i}$  and  $v_{sub\ j}$  relative to  $K$ , where  $K$  is the clustering sensitivity parameter value,  $V_{sub\ i}$  is an actual vector value determined from the  $i$  data file, and  $v_{sub\ j}$  is an actual vector value determined from the  $j$  data file.

Gargi, however, teaches this limitation in the formula below [0053] for efficiently organizing data.

It would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teachings of Gargi would have provided to Bellegarda system aid in developing an organized collection of data ([0009], Gargi).

### ***Response to Arguments***

Applicant's arguments filed 8/22/2007 have been fully considered but they are not persuasive.

Applicant argues (p. 15 of the response, 2<sup>nd</sup> full paragraph) the Bellegarda reference does not utilize meta-data at all, and hence cannot read on the claimed invention. The Examiner disagrees with this argument because Bellegarda explicitly states the use of metadata in their system.

More specifically, Bellegarda explicitly recites clustering based on metadata (paragraph 0025). Further, Bellegarda explicitly recites "clustering can be based upon

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metadata and the like" (paragraph 0049). Therefore, in sharp contrast to Applicant's arguments, Bellegarda does in fact utilize metadata.

As another example of Bellegarda utilizing metadata, their system extracts features of documents and organizes this information in a vector space (figures 4-5) for semantic analysis of a plurality of files (paragraph 0029). As widely known in the art, "meta-data" is essentially "data about data." In its broadest reasonable sense, "meta-data" is data that describes content and characteristics of the data it represents. In Bellegarda, the features extracted from a collection of documents directly correspond to metadata in that they describe the content and characteristics of the data they represent. Furthermore, the central characteristics of Bellagarda's invention can be equally applicable to other methods of clustering, i.e. clustering based on metadata for non-text (graphic) files.

Applicant argues (p.15 of response, last paragraph) that the reference does not teach organizing the extracted meta-data elements into a single ordered set wherein the set is ordered consecutively based on values for one or more of the extracted meta-data elements. The Examiner respectfully disagrees because Bellegarda takes the extracted features and places them in a matrix (figures 4-5) and they organized accordingly (i.e. consecutively, in sequential order according to documents and/or word occurrence).

Applicant argues (page 16, last paragraph of response) that Bellegarda fails to disclose the limitation of calculating pair-wise difference between values of each

extracted meta-data elements. The Examiner respectfully disagrees because Bellegarda teaches a document-to-document comparison (i.e. pair-wise comparison of two documents) based on their extracted features (metadata) to form a basis for clustering (paragraph 0035).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent to Stubler et al. on 12 October, 2004. The subject matter disclosed therein pertains to the pending claims (i.e. organizing data using metadata).

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Timblin whose telephone number is 571-272-5627. The examiner can normally be reached on M-F 8:00-4:30.

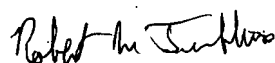
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Robert M. Timblin



Patent Examiner AU 2167

10/17/2007



JOHN COTTINGHAM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100